In the Claims

1. (Previously Presented) A wireless RF module for an MRI apparatus, the wireless RF coil module comprising:

an oscillator configured to generate a carrier signal;

a modulator wired to the oscillator to modulate the carrier signal with an MR signal in an RF coil of the MRI apparatus;

a transmitter configured to transmit the modulated signal; and

a receiver wirelessly connected to the transmitter and configured to receive the modulated signal for subsequent data processing and image reconstruction.

2. (Original) The module of claim 1 wherein the modulator is further configured to amplitude modulate the carrier signal.

3. (Original) The module of claim 1 wherein the carrier signal has a frequency between approximately 300 MH_Z to approximately 3 GH_Z.

4. (Original) The module of claim 1 wherein the receiver is located remotely from the MRI apparatus.

5. (Represented) The method of claim 1 wherein the receiver includes an electric dipole antenna.

6. (Original) The module of claim 1 wherein the transmitter is further configured to transmit the modulated signal out of a bore defined by a magnet assembly of the MRI apparatus.

7. (Previously Presented) A kit configured to retrofit an existing MRI apparatus to wirelessly transmit an MR signal from a receive coil of the MRI apparatus to a receiver configured to input the received MR signal to a data processor for processing and image reconstruction, the kit consisting of:

a modulator configured to modulate a carrier signal with an MR signal in an RF coil of the MRI apparatus;

a transmitter configured to transmit the modulated signal; and

a receiver wirelessly connected to the transmitter and configured to receive the modulated signal for subsequent data processing and image reconstruction.

8. (Previously Presented) An MRI apparatus comprising:

an MRI system having a number of gradient coils positioned about a bore of a magnet to impress a polarizing magnetic field;

an RF transceiver system; and

an RF coil assembly configured to wirelessly transmit an MR signal to the RF transceiver system, the RF coil assembly including an RF modulator configured to modulate a UHF carrier frequency with the MR signal.

9. (Cancelled)

10. (Previously Presented) The MRI apparatus of claim 8 wherein the RF modulator is further configured to amplitude modulate the UHF carrier frequency with the MR signal.

11. (Original) The MRI apparatus of claim 8 wherein the RF coil assembly further comprises a transmitter configured to wirelessly transmit the MR signal out of the bore of the magnet.

12. (Original) The MRI apparatus of claim 11 wherein the RF coil assembly further comprises a receiver wirelessly connected to the transmitter and configured to receive the modulated signal transmitted by the transmitter.

13. (Original) The MRI apparatus of claim 12 further comprising an electric dipole antenna attached to the receiver.

14. (Original) The MRI apparatus of claim 12 wherein the receiver is positioned at an end of the bore from the MRI system.

15. (Original) The MRI apparatus of claim 11 further comprising a rechargeable battery configured to provide power to the RF modulator and the transmitter.

16. (Original) The MRI apparatus of claim 8 wherein the RF coil assembly further comprises a pre-amplifier, a local oscillator, and a 900 MH_Z transmitter.

17. (Currently Amended) An MRI system comprising:

means for positioning a subject to be scanned within a bore of a magnet assembly for MR data acquisition;

means for impressing a polarizing magnetic about the bore of the magnet;

means for exciting nuclei in the subject;

means for sensing signals resulting from the exciting nuclei in the subject;

means for wirelessly transmitting the signals with a UHF carrier frequency signal to a receiver means;

~~batteryless means for powering the means for wirelessly transmitting~~; and

means for reconstructing at least one image of the subject from the signals received by the receiver means.

18. (Original) The MRI system of claim 17 wherein the receiver means includes means for wirelessly receiving the signals transmitted by the means for wirelessly transmitting.

19. (Represented) The MRI system of claim 17 further comprising means for acquiring power for components of the MRI system from a B field associated with an RF transmit pulse sequence from the means for exciting nuclei in the subject.

20. (Previously Presented) The MRI system of claim 17 further comprising means for rectifying induced voltage generated during excitation of nuclei in the subject.

21. (Currently Amended) The MRI system of claim 17 ~~wherein the~~ further comprising at least one battery ~~less~~ and means ~~powering includes means~~ for acquiring power from at least a B field associated with an RF pulse sequence to recharge at least one battery.

22. (Original) The MRI system of claim 17 further comprising means for improving SNR.

23. (Previously Presented) The kit of claim 7 wherein the modulator is further configured to amplitude modulate the carrier signal.

24. (Previously Presented) The kit of claim 7 wherein the carrier signal has a frequency between approximately 300 MH_Z to approximately 3 GH_Z.

25. (New) The kit of claim 7 wherein the receiver is located remotely from the MRI apparatus.

26. (Previously Presented) The kit of claim 7 wherein the receiver includes an electric dipole antenna.

27. (Previously Presented) The kit of claim 7 wherein the transmitter is further configured to transmit the modulated signal out of a bore defined by a magnet assembly of the MRI apparatus.

28. (Previously Presented) An MRI apparatus comprising:

an MRI system having a number of gradient coils positioned about a bore of a magnet to impress a polarizing magnetic field;

an RF transceiver system wired to a modulator;

an RF coil assembly configured to wirelessly transmit an MR signal to the RF transceiver system, the RF coil assembly comprising:

the modulator configured to modulate a carrier signal;

a transmitter configured to wirelessly transmit the carrier signal out of the bore of the magnet; and

a receiver having an electric dipole antenna wirelessly connected to the transmitter to receive the carrier signal transmitted by the transmitter.